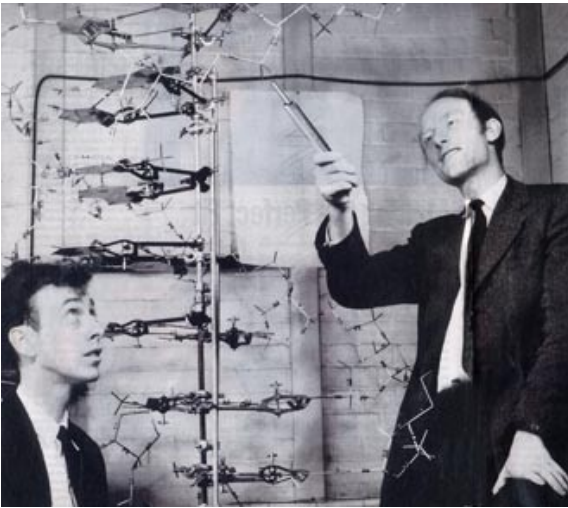


Transcript for the Benji presentation at ISEA.

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In the 1990's, commenting on the impact of the Human Genome Project, the Nobel laureate James Dewey Watson said, "We used to think that our fate was in the stars. Now we know that, in large measure, our fate is in our genes."

(image of rotating gene gif)

Francis Crick and James Dewey Watson became the founding fathers of the new molecular genetics by describing the complex structure of DNA in 1953. Other scientists, building on the knowledge of DNA's structure, 'cracked' the genetic code and began to identify and locate specific genes by the late 20th century. Scientists, working on the Human Genome Project which commenced in 1989, mapped all of the estimated 50,000 to 100,000 human genes and spelled out the entire message conveyed by three billion chemical code letters in the human genome. That message, written in the code of DNA, is found in the nucleus of the body's ten trillion cells (except red blood cells). In the early days, it was understood that these instructions not only determine the structure, size, coloring, and other physical attributes of each human being, but could also affect intelligence, susceptibility to disease, and behavior. Today, decades on, thanks to the ground-breaking work by Prof. Benji Brin, we now know for certain that intelligence, susceptibility to disease, and behavior is also unmistakably determined in the gene, reconfiguring the conception of ourselves, our communities and our world for good.

Today, I will talk about Prof. Benji Brin and his indispensable accomplishments in the domain of biotechnology, internet search and advertising technology, but especially how he managed and utilized the integration of data streams from these disciplines for the betterment of human beings and society at large.



At the nucleus of all his discoveries and inventions lies Benji, an advance intelligent DNA search engine that has resulted from years of precise research and careful development. Benji arose from the concern to leverage cross-disciplinary exponential growing technologies and flows of information that, at the time of Benji's conception, was not completely understood or effectively made use of. The major challenges of the early stages of Benji's development ranged from exponential costs, the aging population, access, the way that we didn't really use information well, and of course the difficult course of adoption of innovation at the time. Since the early 21st century, thanks to Benji, we have witnessed the reduction of cost of gene analysis, the increasingly fast computing speed of bio-informatics, and the growth and progress of internet connectivity and social networking on a quantitative level. On a qualitative level, we have experienced an unprecedented improvement of social behavior, a general satisfaction towards life and stronger sense of freedom of choice.



- **EMPOWERING** THE PATIENT
- **ENABLING** THE PHYSICIAN
- **ENHANCING** WELLNESS
- **CURING THE WELL....** BEFORE THEY GET SICK

What this company opened up was not only a platform to apply Prof Benji Brin's research into practice but it also provided the valuable step in granting the world unrivaled prospects for the understanding and consequently the improvement of health, longevity and the quality of life.

(professional black and white portrait of Prof Benji Brin looking serious and wise)

But before I continue on about the Benji enterprise, I would like to first introduce to you a brief history of the man whom contributed so much to our modern knowledge of science.

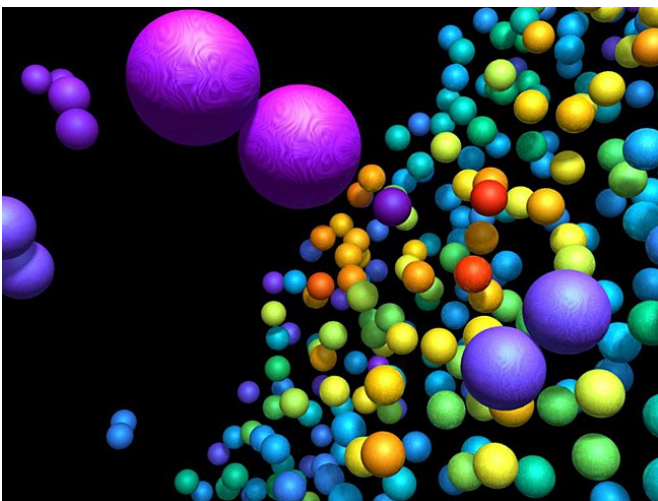
Prof. Benji Brin was complex man, he was a man of many many parts. He was of course, foremost a very great scientist and a philosopher, a wise teacher and the master of his own destiny. As most of you probably all know, although he came from a lineage of intellectual rigor, his family's genetic makeup however was of no match. As his father, Sir Sergey Brin, became conscious of his genetic defect that was passed down to him through his mother and consequently what that would mean for young Benji and the future of his family's pedigree. What Sir Sergey Brin inherited was a mutation of gene called LRRK2 that predisposed him to familial Parkinson's disease. The whole of Silicon Valley was in dismay at the news. His mother, Anne Wojcicki's (voj-ki-ski) online genomics enterprise, 23andme.com, began providing the technology to leverage this genetic information into something practical so that they could address the high likelihood of degeneration.

(image of Benji as a child with his grandmother)

From early on, young Benji demonstrated a precocious talent for computing and biology and found solace in scrutinizing swarms of microbes beneath the lens of his microscope. He pondered endlessly about the little universes living on in tiny specks of skin tissue, hair, saliva or whatever he could get his insatiable hands on. One day as young Benji was playing in the garden, his father called out to him from the veranda of their house and beckoned him to come inside. Recalling the moment so vividly, Benji learns of his families genetic defects, of which his grandmother and father would be its first victims. The gaping hole in his heart at nature's unrelenting ruthlessness would later prove to be productive in his quest to seize the cause of illness, sadness and weakness. It was the knowledge of the LRRK2 gene that plunged young Benji into the the world of genetics and biotechnology.

During the time as a student at the prestigious Silion Valley institution, the Singularity University, he hypothesized that if the psychological mood cycles and physical habitual routines can be conquered in the gene, then it would be possible to not only determine but essentially preempt real physical manifestations - including the prevention of inevitable

disease, addiction of drugs and ultimately, biological breakdown. He was not the first to suggest a correlation between gene and behavior, but he was the first to prove that the essence of 'original behavior' can be traced undoubtedly on the genetic level - or more precisely to a specific gene called BBB1. What was so astonishing was that Benji Brin discovered THE direct link of habits to an actual empirical source. His outstanding reputation as a conscientious student lent weight to the fact that this absolute link was in fact unmistakable. His legacy reveals to us that the BBB1 gene encodes the general cognitive abilities and retain markers to predict the carriers individual habits and patterns arising from an array of external stimuli causing stress, fear, pleasure and pain. Now (figure of speech), the discovery of this gene was aided by another research he was conducting at the same time. The simultaneous development of the method called DNA Isolation Switch was what allowed him to uncover the BBB1. The DNA Isolation Switch, also known as D.I.S came to light when determined Benji patiently conceived of a way to isolate a gene's action at specific points along a single strand of DNA. Prof Benji Brin also realized that by harnessing this component of molecule, the targeted BBB1 could be turned on or off and furthermore manipulated. Prof Benji Brin eventually succeeded in making the D.I.S perform reliably, he had an immensely powerful technique for providing essentially ultimate control of the precise genetic material molecular biologists and others required for their work. Using the method the D.I.S, the BBB1 gene was able to be studied and experimented on simple bacteria and viruses.



(image of the BBB1 gene)

When the beginning of the era of digital medicine started to flourish around this time, thousands of different mobile apps started to see the merging of digital medical records making it available electronically. This rendered it possible for Prof Benji Brin to integrate his genetic research with Internet connectivity, particularly to the line of work his father was pioneering- that of a search engine. At the time when the merging of diagnostics onto the

phone where one could measure and send personal blood glucose level to one's physician, family or friends was widely practiced, Benji Brin was in the midst of innovating something that would become his life project - the ultimate DNA search engine.



(Image of Prof Benji Brin at work)

With the advent of the Benji enterprise, Prof Benji Brin transitioned from academia to commerce knowing that he would be able to bring knowledge to a wider group, namely the method of the D.I.S and other DNA analysis technology. What was once a vision, and now what we take for granted, is the possibility to use it simply over the internet on a phone, ipad or laptop. Without the need to have to go down to your local laboratory, one doesn't have to get out of the house like the old days, to have their DNA sampled, tested and analyzed. Not only does it democratize the opportunity, but it also saves a lot of valuable time. What revolutionized this experience was a simple but highly powerful and intelligent technology that reads and collects one's DNA and specifically the BBB1 gene all online. Receiving just a small sample of saliva onto the screen, the Benji app reads genetic information which is stored in a unique profile. What is so ground-breaking about it, is that not only does it read your individual genetic code, but that it is also the key code to your own personalized search. Furthermore, according to the kind of profile, sub groups are also categorized for a more efficient method of delivering the best results. Since Benji holds the most extensive DNA databank in the world, it is organized according to people with similar essence. Another innovative feature is that through this information it thus provides a platform to have even more connection to similar groups. Simultaneously sophisticated, the search engine has also been specifically tailored to identify and gather the scope of items most suitable to users' needs and desires, but also items that will help them in minimizing risk to direct the prevention of undesired effects. While, Benji provides the ability to leverage genetic data together through D.I.S, querying is just like a search engine - only that it offers the perfect cocktail of a result list for you to choose from. Owing to its unsurpassable

DNA database, the unique performance is its ability to match the sampled DNA with incredible accuracy in determining the most personalized products specifically designed to enhance people and their lifestyle. What this meant is that it allows for a more considerate, empathic system in which it listens and acts according to one's personal needs and desires. As the Benji enterprise has a long tradition of gene specialization, its results have been highly commended.



(screenshot of the Benji website in browser)

Here is a screenshot of the current website. As you can see it has a simple interface with a very user-friendly design to facilitate comfortable navigation of the site and better understanding of user's personal information.

The Benji enterprise's mission is the constructive, practical advancement and betterment of wellness, human life, character, and citizenship, in such manner as to make for human happiness and progress. It was founded to empower individuals and develop new ways of accelerating scientific research and market economy. The Benji enterprise has come together because of the combined agency of genetics and the ubiquity of Internet to have a significant, positive impact. The company believes that people's similarities are just as important as their differences. As Prof Benji Brin once said himself:

"Each and every one of us is unique, but we also share more than a few fundamental similarities. That's one of the biggest lessons of research in the genomic age. But even many of the things that make us distinct - like having blue eyes, high blood pressure, German ancestry or being zealous - we also share with others. Benji helps you connect to and create communities around existing common interests and affinities."

Furthermore, The Benji enterprise is also keen in giving everyone the opportunity to contribute to improving human understanding. To repeat what they said:

"It's fun to learn about your own genome in the light of what you know about yourself, and even more enlightening to see how your data compares to that of your family and friends. But what if you could, at the same time, contribute to science's understanding of how genes interact with the environment to make individuals who they are? We want to build a powerful, diverse, and ever-growing resource for research that combines advances in genetic analysis with the power of the new internet technologies.

Because we believe Benji's mission extends to the advancement of science and economy, we intend to give you the opportunity to participate in research that could improve understanding of how genetics predetermines our lives.

So when you send in that DNA sample, you're not only learning about yourself, you're joining a community of motivated individuals who can collectively impact research and basic human understanding. In today's connected information age, it's no longer just about me. Instead, it's about how we can change our understanding of ourselves and children by joining together."

(image of a Benji advert : The best for my children and the best children for me.)

The proverbial expression "A Leopard Can't Change His Spots" doesn't not hold true in today's world. Through the service of Benji, the intelligent DNA search engine, it is now possible to not only change the spots but the free will to remove or create them. In March 2002, James Watson told a BBC journalist that it would be foolish for parents not to use the technology of genetic engineering because genetically enhanced children "are going to be the ones that dominate the world."

(conclusion still needed)